USDA Forest Service May 14, 2014
Grand Mesa, Uncompahgre, and Gunnison National Forests

Spruce Beetle and Sudden Aspen Decline Management Response

Basic Science and Analysis Assumptions: *Forest Vegetation and Silviculture*

Guiding Issues and Goals

Issue: Forest vegetation has been affected by 2 causal agents, spruce beetle and sudden aspen decline. Current forest vegetation conditions for spruce show excessive mortality. Aspen is in various stages of decline and mortality.

Goals:

- Focus on public health and safety
- Re-establish forests damaged by bark beetles
- Prevent or mitigate future bark beetle outbreaks
- Focus aspen treatments to effectively provide for more diversity of age classes across the landscape
- Mitigate the effects of sudden aspen decline using the best available science to apply what is understood to be the best silviculture prescriptions
- Maximize economic value

Overarching Assumptions

- Beetle Epidemic is catastrophic, so silviculture methods include resiliency treatments and salvage logging in stands with excessive mortality
- Uneven-aged management in live stands with patch cuts or single tree selection
- Work in an adaptive management paradigm. Learn by doing, apply what is learned to change as necessary
- Most spruce-fir stands in the project area are dominated by mature and over-mature trees
- Increasing species mix, decreasing tree size/age and decreasing stand density are indirect control tactics
- The scale of the current beetle epidemic is larger than any event seen in Colorado since European settlement (DeRose and Long 2012)
- Climate change, mainly changes in effective moisture influence beetle outbreaks and SAD (Worrall 2010)
- Beetle outbreak is stochastic and locations of future infestations are not quite predictable.

Methods – Analysis Approach

- Define 'opportunity areas' for treatment (Done)
- May use analysis of size and density to determine where beetle risk is higher and where treatments may be prioritized in the opportunity area
- Will use past timber sale data to estimate timber volumes
- Currently estimating 15-20 CCF/acre in salvage

Expected Outcomes /Results

In areas where management is undertaken, silviculture prescriptions would seek to maintain forest cover. If mortality levels in spruce dominated stands are high, salvage logging would remove dead / dying trees so that a new forest can be natural regenerated or planted (if necessary). In other spruce dominated stands group selection and/or matrix thinning would occur, where authorized under the Southern Rockies Lynx Amendment EIS. Aspen stands would be prescriptively treated to retain aspen on the landscape.

Compliance with Applicable Regulations

Vegetation management activities would comply with the Forest Plan, which complies with the National Forest Management Act of 1976. Design features to address other resource concerns have been added where necessary. Best Management Practices would be applied as needed.